Configuring and Deploying Oracle Database 10g on Mac OS X Server

Session 634

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Enterprise IT

Oracle and Apple

Meeting Customers Needs

Configuring and Deploying Oracle Database 10g on Mac OS X Server

Sergio Leunissen
Senior Product Manager, Oracle HTML DB

http://developer.apple.com/wwdc2005/

Agenda

- Objectives behind Oracle Database 10g
- Key focus areas
- Configuring Mac OS X Server and Oracle Database 10g
- HTML DB Demo

Oracle Database 10g

Objectives

- Enable grid computing
- Deliver highest quality of service
  - Performance and Scalability
  - Availability
  - Security
- Reduce cost and complexity of management
- Most complete and integrated database

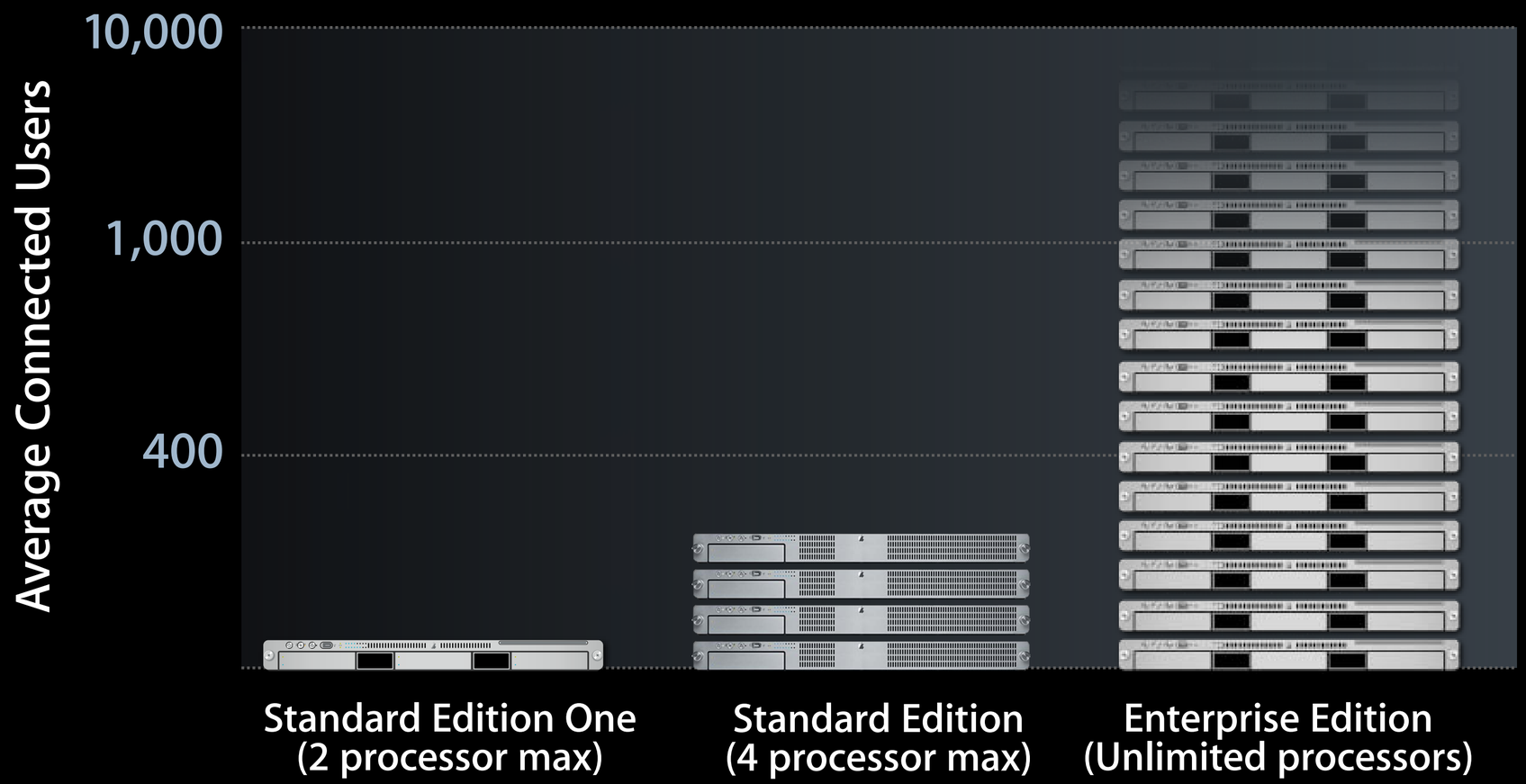
“Simply put, Oracle 10g is by far the most sophisticated database on the market today”

Mario Morejon, Computer Reseller News

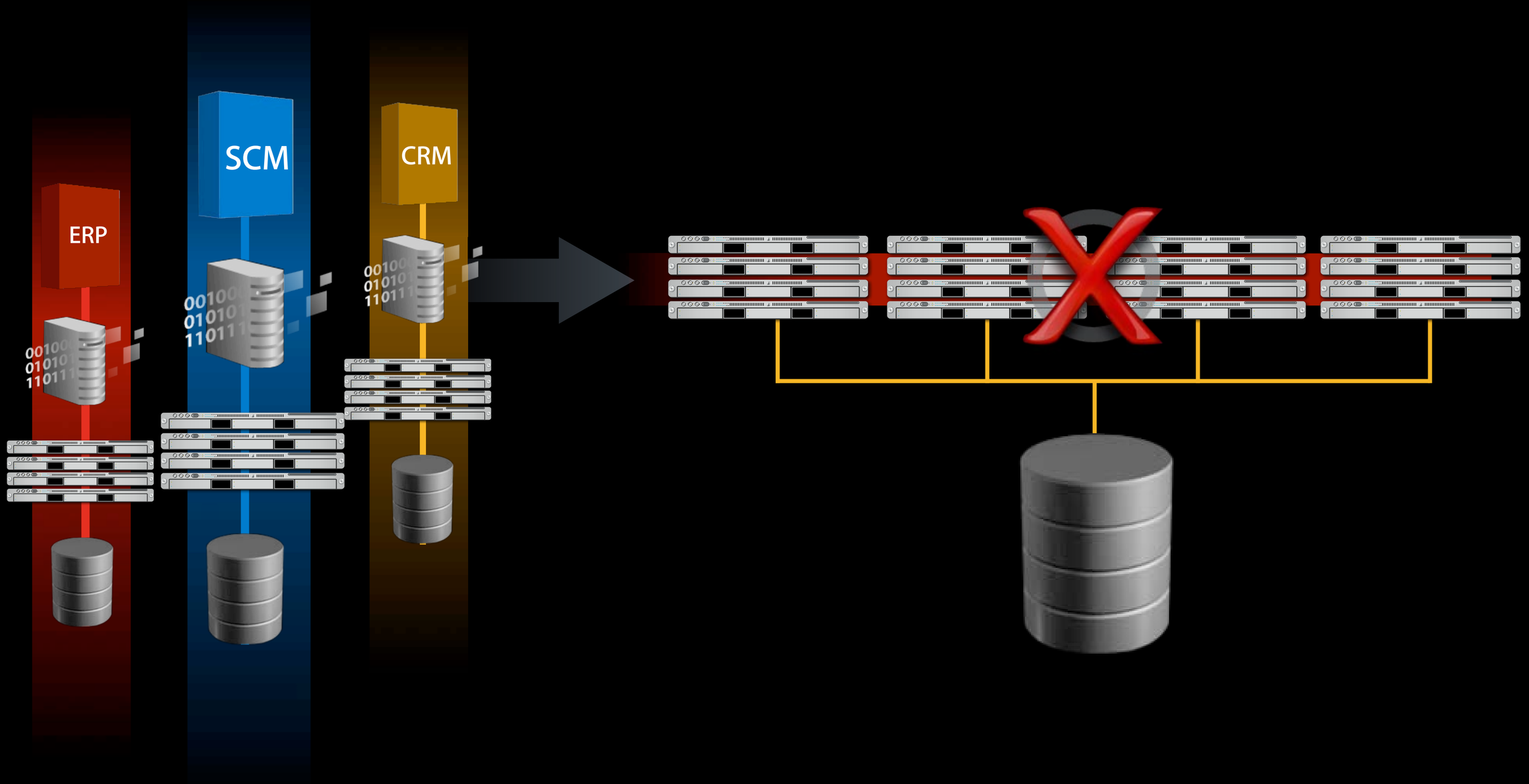
“Small shops stand to benefit
from Oracle Database 10g, too.”

Sean McCown, InfoWorld

Oracle Database 10g Editions

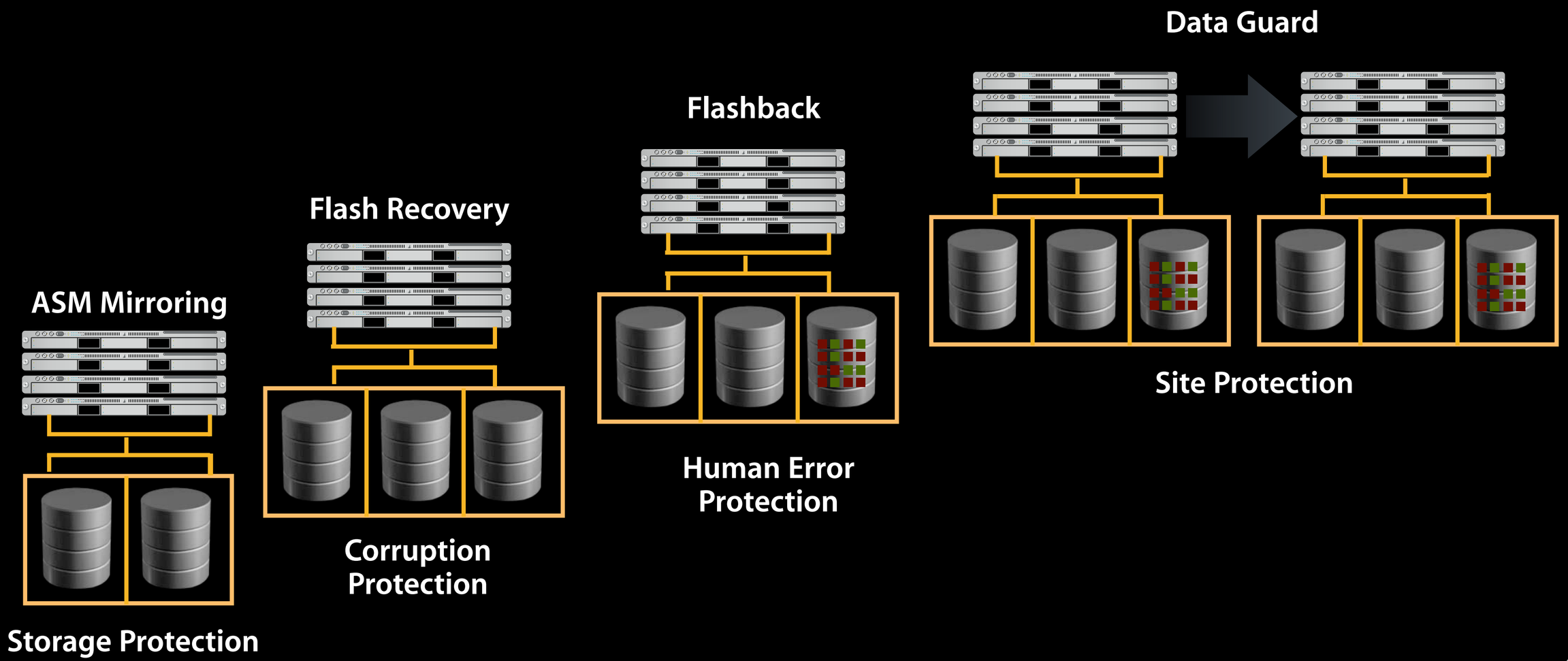


Database Server Grid



Reducing Downtime…

Highest Data Protection for Lowest Cost



Securely Sharing Data

Securing data inside database

- Row level security
- Encrypt data in transit
- Encrypt data in storage
- Fine Grained Auditing

Easier To Manage

Reducing Cost and Complexity

- Automatic Memory Management
- Automatic Storage Management
- Automatic Backup and Recovery
- Automatic Database Diagnostic

Configuring and Deploying Oracle Database 10g on Mac OS X Server

Paul M. Lambert
Mac OS X Architect

http://developer.apple.com/wwdc2005/

Oracle Database 10g on Mac OS X Server

Overview

- Choose where to store your data
- Typical Oracle Database 10g deployments
- Hardware configuration
- Software configuration
- Automating your deployment

Choose Where to Store Your Data

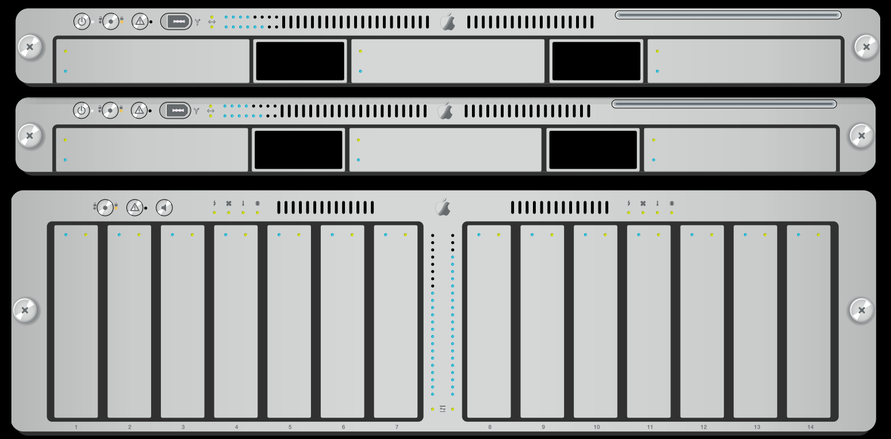
Xserve and Xserve RAID

- Xserve RAID
- Apple Internal PCI RAID Card
- Software mirror
- SAN

Oracle Database 10g

Standard Edition One

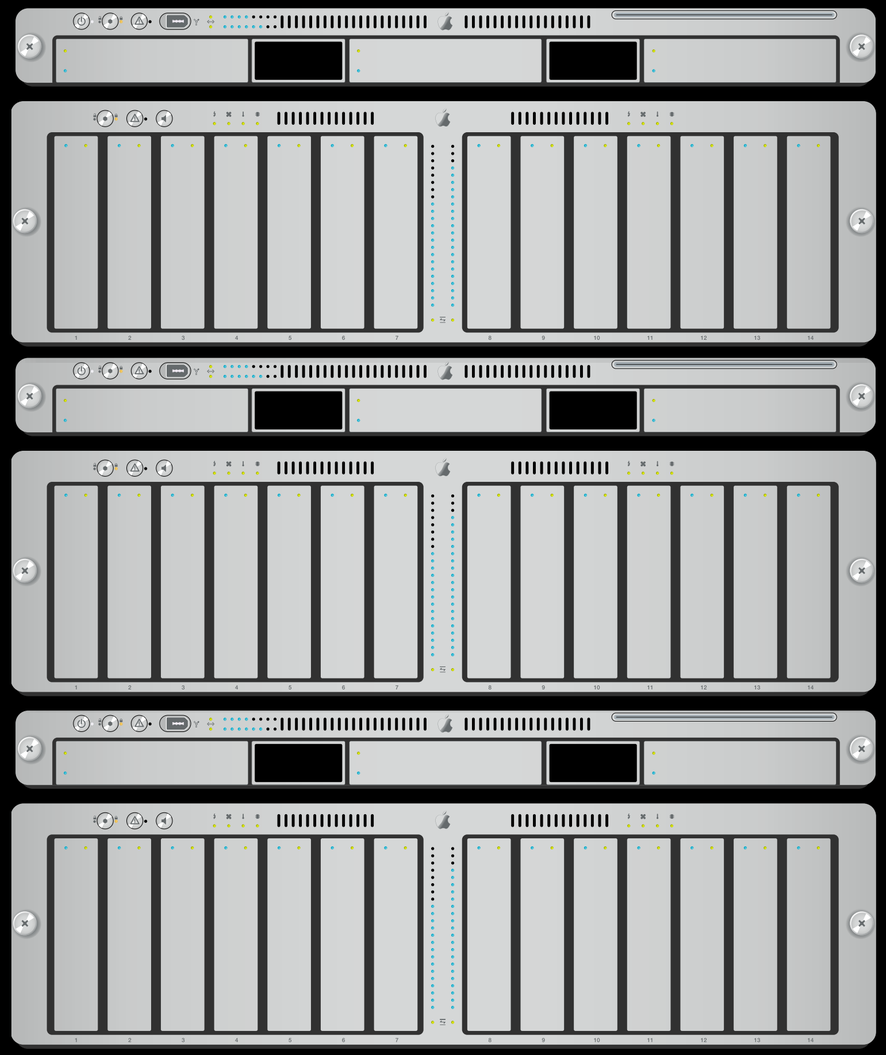
- Xserve G5
- Internal disks or Xserve RAID



Oracle Database 10g

Standard Edition

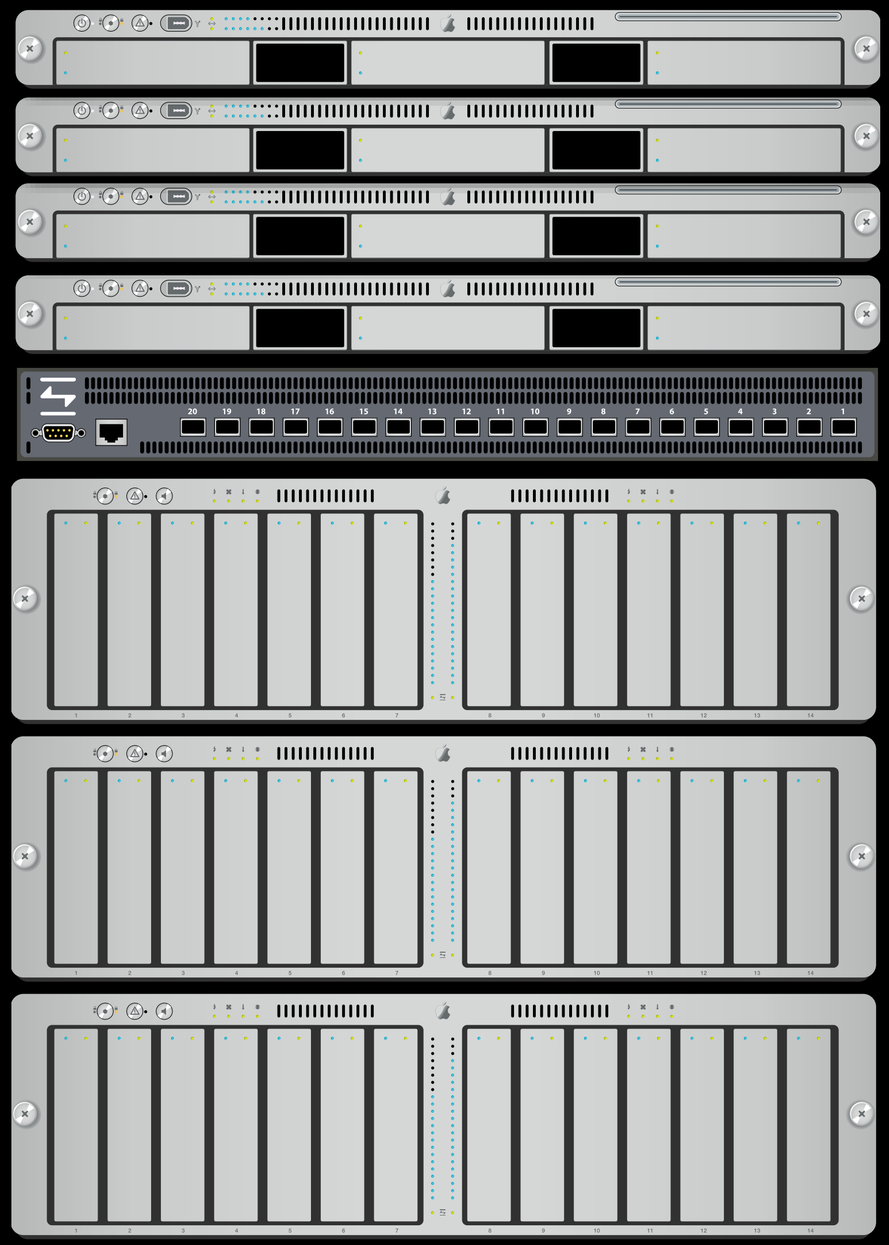
- Two Xserve G5s
- Storage
  - Xserve RAID
  - Internal disks with Apple Hardware RAID PCI Card



Oracle Database 10g

Enterprise Edition

- Xserve G5s
  - Apple Hardware RAID PCI Card
- Storage
  - Xserve RAIDs
  - SAN switch or fabric (optional)



Oracle Database 10g

Real Application Clusters

- Available with Oracle Database 10g Standard and Enterprise editions
- Xserve G5s
  - Apple Internal PCI RAID Cards
- Storage
  - SAN switch or fabric
  - Xserve RAIDs

Hardware Configuration

Apple Hardware RAID PCI Card configurations

- Simple
  - RAID 5
  - Single filesystem for root, application, and data
- Recommended
  - RAID 5
  - Separate root, application, and/or data filesystems
- Oracle-level clustering or fail-over
  - Root on one disk
  - Application and data mirrored on two

Hardware Configuration

Xserve RAID configurations

- Simple
  - RAID 5, 7 disks, 1 LUN
- Recommended
  - RAID 5, 6 disks, 1 hot spare, software mirror across controllers
- Oracle ASM
  - RAID 5, 7 disks, mirror across controllers

Hardware Configuration

SAN configurations

- Simple
  - No zoning
  - Out-of-the-box configuration
- Recommended
  - Zone each LUN to each controller
  - Fewer surprises and interactions

Software Configuration

Mac OS X Server installation

- Mac OS X Server 10.3.6
- Oracle kernel update
- Ethernet driver update
  - http://www.apple.com/support/downloads ethernetdriverformacosx1033.html

Software Configuration

Filesystems for Oracle Database 10g

- HFS+
  - For most configurations
  - AppleRAID software mirroring for Xserve RAID controller redundancy
  - Monitor carefully
- Raw devices
  - For Oracle's ASM, typically with Oracle RAC
  - Actually are a filesystem!
  - /usr/sbin/pdisk
  - /sbin/disklabel
  - Re-read with /usr/sbin/pdisk

Software Configuration

Mac OS X Server tuning

- Modify /etc/rc to read /etc/rc.local_tuning and /etc/rc.local
  - See 10.3.9's /etc/rc for inspiration
- Settings for /etc/rc.local_tuning
- Settings for /etc/sysctl.conf
- Understand what the settings mean
  - Resource limits (ulimit)
  - SysV sysctl settings
    - "sysctl -a"

Software Configuration

System tunables

- Two kinds of tunables
- Kernel sysctl(1) settings
  - Take effect immediately
  - Don’t necessarily change anything immediately
  - See the sysctl(2) man page
- Per-process resource limits
  - Inherited by each process from its parent process
  - Cannot change a running process from outside the process
  - See bash(1) under ulimit
  - Cannot set for mach_init(2)
  - Pay attention to maxprocsperuid’s interaction with GUI logins

Automating Deployment

Reproducible System Configurations

- Automate your Xserve G5 configuration
  - Apple Hardware RAID PCI Card
  - AppleRAID software mirroring
- Automate your Mac OS X Server 10.3.6 configuration
  - Create a deployment image
  - Or integrate into existing deployment procedures
  - Verify users and groups
  - Install /etc/rc, /etc/rc.tuning_local, and /etc/rc.local
- Automate raw device configuration
  - Create partition table and Apple_Label partition
  - Run disklabel with standard parameters

Oracle Database 10g on Mac OS X Server

Summary

- Choose where and how to store your data
- Configure your hardware for availability
- Configure your software for supportability

Oracle Database 10g and HTML DB

Sergio Leunissen
Oracle HTML DB Product Manager

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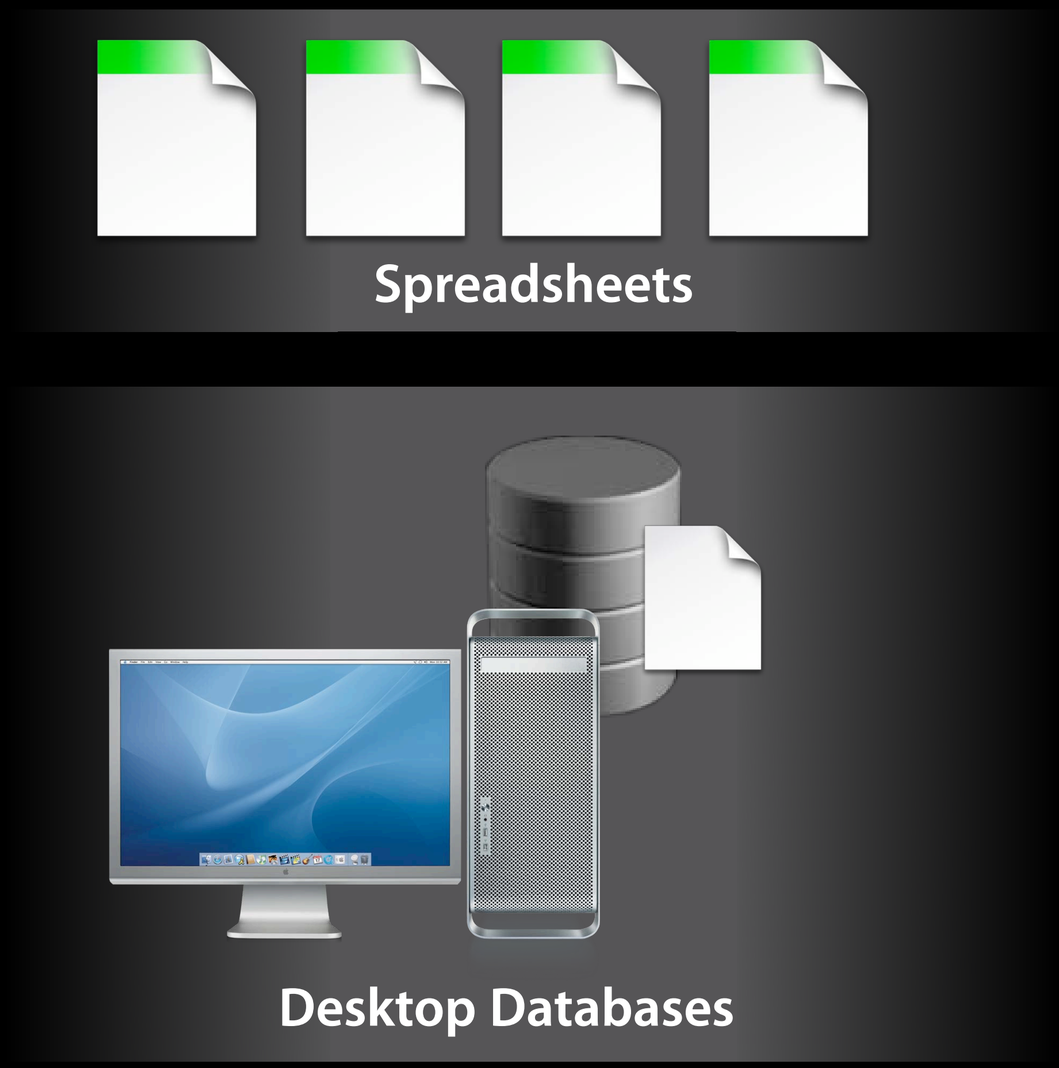
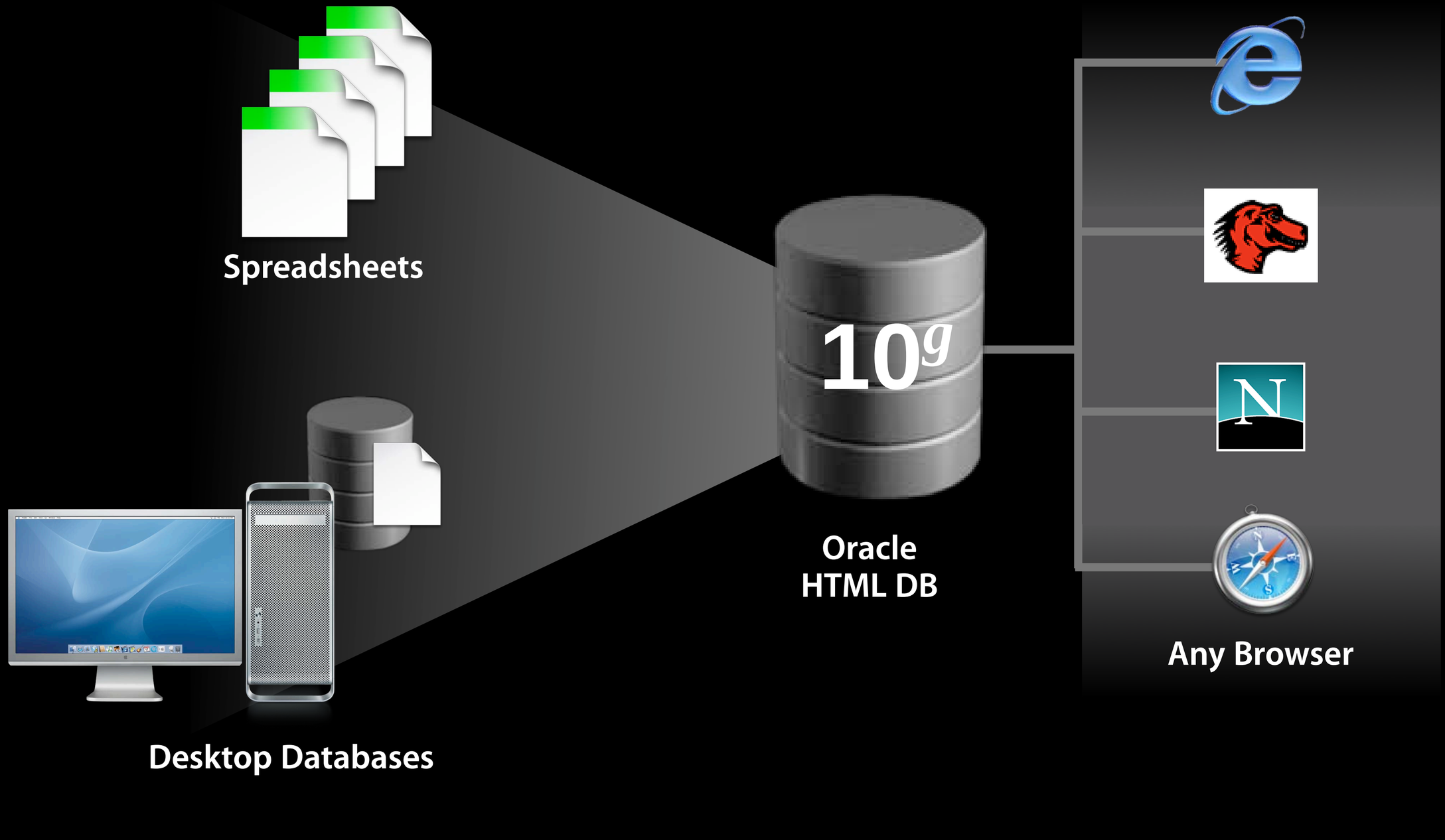


The Spreadsheet Challenge

- Fragmented: Data in many places
- Vulnerable: Data not secure or protected
- Web-unfriendly: Need client software
- Costly: Inefficient use of resources

Consolidate With HTML DB



Demo

Oracle HTML DB

http://developer.apple.com/wwdc2005/

Summary

- Apple and Oracle are working together to deliver solutions for businesses of any size
- Visit the data center on the first floor and see Oracle Database 10g RAC running on Mac OS X
- Following this session, please join us to learn more about Oracle Database 10g Real Application Clustering:
  - 10:30–12pm—Level 2, Alcove 3, across from the Enterprise IT Lab

Q&A

http://developer.apple.com/wwdc2005/

More Information

http://developer.apple.com/wwdc2005/

Documentation, Sample Code, and Other Resources

http://developer.apple.com/wwdc2005/

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